

CLAIMS

1. A heat-peelable pressure-sensitive adhesive sheet comprising a substrate; and a heat-expandable pressure-sensitive adhesive layer arranged on or above at least one side of the substrate, the heat-expandable pressure-sensitive adhesive layer containing a foaming agent and having a shear modulus (23°C) in an unfoamed state of 7×10^6 Pa or more, wherein the adhesive sheet further comprises a pressure-sensitive adhesive layer being arranged on or above the heat-expandable pressure-sensitive adhesive layer and having a shear modulus (23°C) of less than 7×10^6 Pa.

2. The heat-peelable pressure-sensitive adhesive sheet according to claim 1, wherein the heat-expandable pressure-sensitive adhesive layer comprises a pressure-sensitive adhesive having a shear modulus (23°C) after being cured or dried of 7×10^6 Pa or more, and wherein the pressure-sensitive adhesive layer arranged on or above the heat-expandable pressure-sensitive adhesive layer comprises a pressure-sensitive adhesive having a shear modulus (23°C) after being cured or dried of less than 7×10^6 Pa.

3. The heat-peelable pressure-sensitive adhesive sheet according to one of claims 1 and 2, wherein the pressure-

sensitive adhesive layer arranged on or above the heat-expandable pressure-sensitive adhesive layer has a thickness of 0.01 to 10 μm .

5 4. The heat-peelable pressure-sensitive adhesive sheet according to any one of claims 1 to 3, further comprising an organic rubber-like elastic layer arranged between the substrate and the heat-expandable pressure-sensitive adhesive layer.

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5. The heat-peelable pressure-sensitive adhesive sheet according to any one of claims 1 to 4, wherein the heat-expandable pressure-sensitive adhesive layer has a shear modulus (95°C) in an unfoamed state of less than 7×10^6 Pa.

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6. The heat-peelable pressure-sensitive adhesive sheet according to any one of claims 1 to 5, wherein the foaming agent in the heat-expandable pressure-sensitive adhesive layer has a foam initiating temperature higher than 80°C.

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7. A method of processing an adherend, comprising the steps of applying the heat-peelable pressure-sensitive adhesive sheet according to any one of claims 1 to 6 to the adherend, and subjecting the adherend to processing.

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8. The method of processing an adherend according to claim 7, wherein the adherend is an article to be an electronic component.

5 9. The method of processing an adherend according to claim 7, wherein the adherend is an article to be a semiconductor component.

10 10. An electronic component produced using the method of processing an adherend according to claim 8.

11. A semiconductor component produced using the method of processing an adherend according to claim 9.